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CANADA AND U.S. OUTWARD FDI AND EXPORTS: ARE CHINA AND INDIA SPECIAL?

Madanmohan Ghosh and Weimin Wang
Industry Canada

Working Paper 2007-05

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Abstract

This paper studies Canadian and American experiences of foreign direct investment (FDI) and exports, particularly to China and India. Using cross-country time series data for the period 1989-2001, outward FDI and exports equations based on a version of the gravity model are separately estimated both for Canada and the United States (U.S.). Although casual examination of raw data may suggest that Canada is underperforming in its exports and FDI in China, results from the econometric model do not support this conclusion. The results do suggest, however, that Canada's FDI in India is lower than that predicted by the model.

While both Canadian and U.S. investors tend to invest more in large economies, the elasticity of FDI outflows with respect to GDP is higher for the U.S. compared to Canada. The degree of trade openness in the host countries and geographical distance between the source and host countries are found to significantly affect the flows of FDI and exports from both Canada and the U.S. Interestingly, while the econometric evidence that investors from the U.S. tend to invest more in the growing economies is quite strong, the evidence is weak in the case of Canada.

Although in-depth research is necessary to understand why Canadian investors are not very sensitive to host country economic growth, it is plausible that there are mismatches between those sectors in high growth locations, such as China and India, where investment opportunities are available and the areas in which Canadians have comparative advantage. For example, financial services and mining constitute a large share of Canadian FDI abroad but these sectors are yet to be fully opened to international investment in China and India. Also, the U.S. FDI base is more diversified and it may be better able to take advantage of the increased opportunities in fast growing countries such as China and India.

Key words: FDI, exports, gravity model, Canada, U.S., China, India

Resumé

Cette étude traite de l'investissement étranger direct (IED) et des exportations du Canada et des États-Unis, principalement en Chine et en Inde. Des séries de données chronologiques des deux pays pour la période 1989-2001 sont utilisées pour estimer des équations fondées sur une variante du modèle gravitationnel et exprimant les sorties d'IED et les exportations du Canada et des États-Unis. Un examen sommaire des données brutes peut donner à penser que les exportations et l'investissement direct du Canada en Chine sont moins importants qu'ils ne pourraient l'être, mais ce n'est pas ce que montrent les résultats du modèle économétrique. Ces résultats laissent cependant entendre que l'investissement direct du Canada en Inde est inférieur à celui que prédit le modèle économétrique.

De façon générale, le Canada et les États-Unis investissent plutôt dans les grandes économies, mais l'élasticité des sorties d'IED par rapport au PIB est plus forte aux États-Unis qu'au Canada. Selon les résultats, le degré d'ouverture au commerce des pays d'accueil et la distance séparant les pays d'origine et les pays d'accueil influent nettement sur les flux d'investissement direct et

les exportations provenant tant du Canada que des États-Unis. Il est toutefois intéressant de constater que, tandis que les résultats de l'analyse économétrique montrent de façon très probante que les États-Unis investissent généralement davantage dans les économies en développement, ces résultats sont moins probants dans le cas du Canada.

Il faudra approfondir l'analyse pour comprendre pourquoi les pays d'accueil en croissance n'exercent pas un très grand attrait sur les investisseurs canadiens, mais il se peut que les occasions d'investir offertes par des pays à forte croissance, comme l'Inde et la Chine, ne concordent pas avec les domaines dans lesquels le Canada a un avantage comparatif. Par exemple, une grande part de l'investissement canadien direct à l'étranger touche les secteurs des services financiers et de l'exploitation minière, mais la Chine et l'Inde n'ont pas encore ouvert ces secteurs à l'investissement étranger. En outre, l'IED des États-Unis est plus diversifié et les investisseurs américains sont plus en mesure de tirer parti des occasions accrues qu'offrent des pays à forte croissance comme la Chine et l'Inde.

Mots clés : IED, exportations, modèle gravitationnel, Canada, États-Unis, Chine, Inde

1. Introduction

During the last couple of decades increased economic integration led by a reduction of barriers to trade and investment, economic reforms and technological progress has resulted in rapid economic growth, and a dramatic increase in trade and investment flows in some countries.[1] In this matter China and India draw special attention from academics as well as policy makers. These two Asian giants after long years of isolation, with limitations of foreign goods and capital, have in recent decades thrown their doors wide open to both (Guha and Ray 2000).[2] The average annual growth rate of per capita gross domestic product (GDP) in China exceeded 8 per cent during the last decade. GDP per capita in India grew at a rate of over 3.6 per cent during the same period. In 2003 China received about 10 percent of the world foreign direct investment (FDI) inflows and became the world's largest recipient of FDI for the second time. Although India's share of world inward stock of FDI is much smaller, a recent Global Investment Prospect Assessment (GIPA) report, asserts that China and India, followed by the United States, are the leading countries for which FDI prospects are the brightest.[3] Some, however, attribute the apparent low statistics of India to differences in methodology adopted in measuring FDI between India and other countries including China.[4]

Since 1980 China's exports of goods and services registered more than a 23- fold increase, reaching 332 billion in 2002. In nominal terms, China currently accounts for almost

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[1] The global stock of FDI almost tripled during the 1980s followed by a twofold increase during the 1990s reaching US$8.2 trillion in 2003.

[2] China's isolation has been more profound. Its policy reversal came a decade earlier than that of India and was more radical and complete at least with respect to FDI.

[3] UNCTAD website accessed on September 14, 2004: http://www.unctad.org/Templates/Page.asp?intItemID=2992&lang=1. During the same period India's share in world inward stock of FDI increased from 0.07 percent to 0.37 percent. In 2003 India received 0.76 percent of world FDI inflows.

[4] The low FDI statistics in India, however, raises some issues around how they are measured in India and China and their comparability (Pfefferman 2002). International Financial Corporation (IFC) notes that India's FDI statistics exclude reinvestment earnings, subordinated debt, and overseas commercial borrowings. These are included in FDI in other countries. IFC also estimates that 'round-tripping' in China could be 50% of total FDI inflows. After accounting for these differences IFC concludes that there is not a huge difference between China and India in FDI inflows as a percentage of GDP (Gordon 2002). See also (Srivastava 2003).

4 percent of world output - more than one and a half times bigger than Canada. Measured in purchasing power parity (PPP) term, China's share of global output has risen from close to 11 percent in 2000 to over 13 percent in 2004 (Krueger 2005). Between 1982 and 2001, merchandise exports from India quadrupled, but its world share has increased only marginally from 0.5 to 0.7 percent.

China's and India's sheer size, coupled with rapid growth, low wages and increasingly skilled workforces make them a major destination for international investments as well as a low-cost supplier of a wide range of goods and services. This paper examines how Canadian and U.S. investors and exporters have responded to increased international market opportunities in general, and to China and India in particular. More specifically, we attempt to answer four research questions. Firstly, how is Canada doing in terms of exploiting its FDI and export opportunities in China and India? Secondly, how does Canada's performance compare with that of the U.S? Thirdly, what are the possible explanations for the differences between the U.S. and Canadian FDI and exports performances in China and India? And finally, are there significant opportunities for diversifications in these markets for Canada?

Using panel data for the period 1989-2001, we separately estimate models of Canadian and U.S. FDI outflows and exports, based on a version of the Gravity Model. Regression results suggest similarities as well as dissimilarities in the pattern of FDI and exports flows from Canada and U.S. As expected the economic size and the degree of trade openness in the host countries and geographical distance between the source and host countries are found to affect significantly the flows of FDI and exports from Canada and the U.S. The crucial difference is that while U.S. investors tend to invest more in growing economies, there is only weak evidence as to the same for Canadian investors. In-depth research is necessary to understand why it is so. But it seems

that there are mismatches between the areas where investment opportunities are openly available in the most rapidly expanding markets such as China and India, and areas in which Canadians have comparative advantage. For example, financial services and mining are the areas in which a large share of Canada's outward FDI is concentrated, but these sectors are yet to be opened up in China and India.

Given that China and India are somewhat special economies in terms of economic size and their recent rapid growth, we examine whether they exert any significant influences on Canadian and U.S. outward FDI and exports. We do not find statistical evidence in support of China exerting any special influence in drawing exports and FDI from Canada and the U.S. However, results show that Canadian FDI in India is lower than that predicted by the model.

In the next section we describe the trends in Canada's FDI and exports to China and India and compare it with that of the U.S. In section 3 we provide a brief literature review focused on the determinants of bilateral FDI and trade. In section 4, regression models and data sources are discussed. Section 5 presents the empirical results and section 6 concludes.

2. Canadian and U.S. FDI and Exports to China and India: An Overview

This section provides an overview of Canada's U.S., China's and India's FDI and exports during the last decades. This will help us explain the econometric results.

Canada's outward FDI flows have increased substantially in recent years. In fact, the stock of outward FDI has surpassed the inward FDI since 1997 (see Figure 1). FDI as a percent of GDP (and its growth) has been higher for Canada than the U.S. during the past two or three decades. The stock of outward FDI from Canada as a percent of GDP increased from 9.5 percent in 1982 to 38.3 percent in 2002. During the same period the U.S. outward stock of FDI

increased from 6.4 to 14.6 percent of GDP. The inward flows of FDI in both countries also increased, but at a slower pace. For the U.S. the inward flows increased from 3.9 percent of GDP in 1982 to 13.0 percent in 2002. This implies that while the outflow-inflow gap remained stable over time for the U.S., it widened for Canada from a net inflow position until 1996, to a net outflow position in the subsequent years.

At present, exports account for more than 40 percent of Canada's real GDP. Similarly, imports represent about 40 percent of GDP. Since 1990, Canada's export intensity and import penetration have increased considerably. For instance, between 1990 and 2002, the ratio of exports to GDP in Canada increased by more than 10 percentage points (Ghosh and Rao, 2005). Between 1992 and 2002, the world share of Canadian exports increased from 3.6 percent to 3.9, while that of the U.S. declined from 11.9 percent to 10.7.

China

FDI in China started in 1979 (Lai, 2002), but dramatic growth took place in the 1990s. Between 1992 and 2002 China's share in world inward FDI increased from a little over 1 percent in 1990 to over 6 percent in 2002 and its world import share almost doubled to 5.3 percent during the same period (Table 1). Casual observation suggests that while both the U.S. and Canada have generally followed the global trend in FDI and trade flows into China, Canada lags behind the U.S. China's share in Canada's stock of outward FDI increased significantly during the early 1990s to 0.23 percent in 1995, but it fell to 0.14 percent in 2003. China's share in U.S. outward FDI increased from 0.11 percent in 1992 to 0.68 percent in 2002. In trade, the share of China in Canadian exports declined slightly, while China's share in U.S. exports between 1992 and 2002 doubled to 3.2 percent (Table 1).

In absolute terms, Canada's total outward FDI stock nearly quadrupled between 1990 and 2003, and its stock in China increased from $25 million in 1991 to $542 million (CND) in 2003, implying a 22-fold increase (Table 2). U.S. outward FDI followed the same pattern. While the total U.S. stock of outward FDI to all destinations increased five times between 1990 and 2003, the U.S. stock in China increased 24-fold from a level of $426 million in 1991 to $10 billion in 2002 (Table 3). The inward stock of total FDI from all sources in China increased 22-fold from $21 billion in 1990 to $448 billion in 2002. These findings suggest that increased inflow of FDI into China from the U.S. and Canada are very much a part of global trend.

A few countries dominate in Chinese inward FDI stock. Although its share has fallen recently Hong Kong has always been the most important source of China's inward FDI. Average share of Hong Kong in accumulated FDI in China was 48 per cent during 1992-2000 (last column in Table 4). Hong Kong's share in Chinese FDI stock has fallen from 68 per cent in 1992 to 38 per cent in 2000. In the 1980s much of the investment from Hong Kong represented transfer of export-oriented labour intensive manufacturing industry to China with cheap labour. The continuously declining share of Hong Kong's investment in the 1990s reflects saturation of the export-oriented manufacturing industries in China (Lai, 2002).

Another 40 percent of Chinese accumulated FDI originated from the U.S., Taiwan, Japan, Singapore, the Virgin Islands, Korea, and the UK. While the investment share of Hong Kong significantly decreased, the share of the U.S. and the EU greatly increased. The shares of both the U.S. and Canada are rising and place at 8.5 and 0.7 percent respectively during 1992-2000 on average. Canada's GDP is one tenth of U.S., this share is comparable if the U.S. FDI performance in China is used as the benchmark.

The inward FDI to import ratios in China show that China receives proportionately higher levels of investments from abroad than the global average (Table 5). However, the inflows from Canada and the U.S. into China are proportionately lower than their overall average investment from abroad. The outflow of FDI as a ratio of exports on average across all destinations from Canada and the U.S. are 17 and 18 percent respectively, compared to that in China of 2.6 and 10 percent in 2000. The relatively smaller outflow of direct investment from Canada and the U.S. to China can be due to several factors such as the distance, language and other barriers discussed later.

Outflow of FDI as a ratio of exports to China from Canada is much lower than that from the U.S. counterpart (3.7 vs. 15.2 percent in 1999). Several factors may be responsible for the apparent differences in Canadian and U.S. FDI performances in the Chinese market. A possible explanation may lie in the composition of Canadian and U.S. outward FDI compared to that of the Chinese inward FDI. Since data on the composition of Canadian and U.S. FDI bound to China are not available, we compare the overall (across countries) composition of Canadian and the U.S. FDI with that of Chinese inward FDI.

Table 6 provides the composition of Chinese FDI by industry in 2003. Tables 7 and 8 provide industrial composition of Canadian and U.S. FDI between 1992-2003. The phenomenal growth of FDI inflows into China has been dominated by the manufacturing sector.[5] Over 70 percent of inward FDI in China has been in the manufacturing sector, while the share of services is about 24 percent. A comparison of Tables 7 and 8 shows that more than 42 percent of Canadian FDI abroad is in finance and insurance while the share for the U.S. is about 20 percent in 2003. When this is compared with the composition of Chinese inward FDI it appears that the share of finance and insurance in Chinese inward FDI in 2003 is only 0.43 percent. Similarly

[5] A rise in investment in the services industry in China recent years is in line with the global trend.

energy and mineral sectors account for a major share (22 % in 2003) in Canadian FDI abroad but it seems that China does not factor prominently in this sector. The share of mining in Chinese inward FDI in 2003 is merely 0.63 percent.

India

India's share in world merchandise imports as well as inward FDI stock increased in the 1990s. Between 1992 and 2002 India's share in world imports increased from 0.52 to 0.72 percent, while the share of inward FDI increased substantially from 0.08 to 0.37 percent (Table 1). In absolute terms the inward stock of FDI in India increased from 1.66 $US billion in 1990 to 30.83 $US billion in 2003. The outward stock of FDI from India also increased substantially from a low $US 63 million in 1993 to more than 5 billion $US in 2003 (WIR 2004).

Inflow of FDI from Canada and the U.S. into India has been relatively smaller than that into China in absolute terms (Table 2 and Table 3). Stock of Canadian FDI in India almost doubled to184 million $CND million in 2003 from 94 $CND million in 1990. The stock of U.S. FDI in India increased from a mere 0.37 $US billion in 1990 to 3.7 $US billion in 2002. India's share in total Canadian outward FDI stock has fallen from 0.11 percent in 1995 to 0.05 in 2002, while FDI from U.S. in China increased steadily (Table 1). Similar is the case for exports to India.

Mauritius followed by the U.S., Japan, the UK and the Netherlands is the top investing country in India (Table 9). Accumulated stock of FDI in India from these five constitute more than 72 per cent of India's total FDI stocks, the share of Mauritius and the U.S. being 35 per cent and 17 per cent respectively.[6] In terms of percentage of imports, India received more FDI from Canada than did China (Table 5). On the contrary FDI inflow as a percentage of imports from the United States and the World to India are less than that of China. This however, should be interpreted cautiously as the levels of imports and FDI inflows from Canada and the U.S. to India are very small. On average India attracts less FDI from the world as a percentage of its imports.

[6] Many foreign countries invest in India through Mauritius for tax purposes.

For example, in 2000 the total inflow of FDI to the world as percentage export was 18.6 per cent. The corresponding numbers for China and India are 18.1 per cent and 4.5 per cent.

Table 10 presents the composition of India's inward FDI inflows between 1991 and 2004. Electrical equipments, transportation, telecommunications and energy are the top recipients of FDI in India. These sectors accounted for about 60 percent of total inward FDI to India between 1991 and 2004. Hotel and tourism and other services sector attracted more than 22 percent of total inward FDI flows during the same period. These show that inward FDI to India is concentrated to selected sectors.

3. What Determines Bilateral FDI? Literature Review

There is a considerable body of literature on the determinants of FDI at the firm, industry and aggregate level consisting of both cross-sectional and time series analyses. A critical review of the burgeoning literature can be found in Dunning (1993), Caves (1996) and Blonigen (2005). This section provides a selective literature review.[7]

Theoretical works in this area have used mostly imperfect-competition models to identify the FDI-trade relationship, for example, Helpman (1984), Markusen (1984, 2002), Helpman and Krugman (1985) and Markusen and Venables (1998). The popular empirical methodology has been the gravity model. Tinbergen (1962), and Linnemann (1966), pioneered the use of a gravity model to explain the spatial pattern of international trade. While the gravity model has been used extensively in studies of trade, its application on the determination of the spatial dimension of FDI is also increasing.[8]

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[7] Also see Fredricksson (2003) for a review of UNCTAD's research on transnational corporations.
[8] See McCallum (1995) for its application in explaining Canada-U.S. trade.

The extensive literature essentially examined the role of certain important traditional demand factors, such as wage rates, capital costs, market size, and proximity to local markets, to FDI decisions (studies include Kravis and Lipsey (1982, 1989), Lipsey (1994, 2002), Blomstrom and Lipsey (1986), Barrell and Pain (1996), Milner and Pentecost (1996), Brainard (1997)). Some studies also include a set of qualitative variables such as, cultural similarity, risks and political instability (Grosse and Trevino (1996)), language spoken and quantitative variables such as tariffs (Hejazi and Safarian (1999, 2002), Caves (1996) and Dunning (1993)).

Biswas (2002) introduced a set of non-traditional factors such as, economic regime, contract enforcements, corruption, law and order, and quality of bureaucracy in a panel data model of the U.S. direct investment into 44 countries from 1983 to 1990. She finds considerable support for both the traditional and non-traditional factors explaining the special dimension of U.S. FDI abroad. Among the non-traditional factors, property rights and regime types have significant influence in investment. It is worth mentioning that the regression results show labour costs play a small role compared with other factors such as infrastructure and property rights.

The theoretical underpinning of Razin, Rubinstein and Sadka (2003) is based on fixed setup costs of new firms. They provide a reconciliation of the so-called Lucas' paradox in their paper using a sample of 45 developed and developing countries.[9] Gopinath and Echeverria (2004) introduced the notion of institutional distance in a gravity model to analyze the FDI-trade relationship. Data from six source countries, namely France, Germany, Japan, the Netherlands, the United Kingdom, and the United States and 79 host countries for the year 1998 are used. They hypothesize that institutional requirements are likely to be different for trade and FDI

[9] The law of diminishing returns implies that since the marginal product of capital is high in poor countries, capital should flow from rich to poor countries. But empirically it is not true. Lucas (1990) reconciles this paradox.

transactions. For example, given that trade is an arms-length transaction, it may not require information on an economy's internal regulation, accountability, corruption control or other institutional indicators, but FDI do. In a recent study Eichengreen and Tong (2005) analyze how China's emergence as a destination for FDI is affecting the ability of other countries to attract FDI using the gravity model approach. Di Giovanni (2005) uses a gravity model to analyze cross-border mergers and acquisitions.

4. The Model and Data

The Model

Our empirical model is based on earlier theoretical as well empirical work in line with the gravity model. The theoretical foundation of the gravity model can be found in Anderson (1979), Bergstrand (1985) and recently Anderson and Wincoop (2003). In analogy with the formula for gravitational attraction, it postulates that trade flow between any pair of countries is proportional to their economic size and inversely related to their geographic distance.[10] Dummy variables are then used to account for any special relations such as the impact of trade arrangements between the bilateral partners.

The regression model used for both the FDI and export in the paper is as follows:

$$\ln(Y_{i,t}^{j}) = \beta_0 + \beta_1 \ln(GDP_{i,t}) + \beta_2 \Delta \ln(GDP_{i,t}) + \beta_3 OPEN_{i,t} + \beta_4 \ln(DIS_i^{j}) + \beta_5 LC_i + \beta_6 LAN_i^{j} + DUMMY_t + DUMMY_t + \varepsilon_{i,t}^{j} \quad \textbf{(1)}$$

Where j, i, and t represent source country, host country and time respectively. There are two source countries (Canada and the U.S.) in our dataset, and equation (1) is estimated for each

[10] Anderson and Wincoop (2003) developed a model that has solid theoretic foundation. The interesting feature of their model is the inclusion of the "multilateral resistance" indices as explanatory variables, which can avoid omitted variable bias facing earlier gravity models.

country separately to understand the similarities and differences between Canada and the U.S. The dependent variable Y can be FDI outflows or exports (adjusted using GDP deflators of host countries). We use similar sets of variables[11] to explain the FDI outflows as well as exports although some of these, such as distance, matter more for exports and others, such as labour cost, matter more for FDI outflows. In equation (1) GDP measures the "mass" or economic size of a country. Both exports and FDI responds positively to the GDP of the host country.[12] GDP growth is used an explanatory variable to test its effect on the export and FDI flows. This will capture the extent to which economic growth influences the export and investment flows in a host economy.

The variable $OPEN$, in equation (1) represents host economy openness, defined as trade-to-GDP ratio (usually called trade openness), or as FDI-to-GDP ratio (FDI openness). A higher degree of openness implies that policies and economic structure are favourable for FDI and trade and therefore the estimated coefficients are expected to be positive. The variable DIS, represents geographical distance between the source and host countries. Greater geographical distance implies higher transaction costs, and therefore negatively affects trade and investment flows between a pair of countries.

The vertical FDI model predicts that a firm may reallocate its labour-intensive production activities to labour abundant countries in order to obtain higher returns to capital (Helpman (1984)). The inclusion of labour cost (LC) in equation (1) is to test the hypothesis that capital from Canada or the U.S. flows to countries with abundant labour supply. The coefficient of

[11] The only difference is that the trade-to-GDP ratio is used for the exports equations while the FDI-to-GDP ratio is used for the FDI outflow equations.
[12] Some researchers use GDP per capita and population separately instead of GDP. For example, see Razin et al. (2003, 2004).

labour cost would be negative and significant if vertical FDI prevails. We also use labour cost to explain exports because part of exports might be FDI-induced[13].

Countries that exhibit similarities in economic structures may tend to experience more trade and investment flows between them. In order to capture the effects from similarities in economic structure, a dummy variable for G7 countries is introduced. When trade and investment flows are between members of the G7 countries the dummy takes a value of 1 (zero otherwise).[14]

Sharing a common political or economic history or a common language can positively affect trade and investment flows due to lower transaction costs. People use different groups of variables to capture the impact of those factors on bilateral trade and investment flows, depending on their purposes and data availability[15]. Two countries that share a common language may have lower transaction costs for trade and investment between them (see Frankel (1997) for example). We use a dummy variable (LAN) to represent such a linguistic tie. The language dummy equals 1 if the two countries share a common language and 0 otherwise. The commonly used languages in Canada are English and French, and those in the U.S. are English and Spanish. Furthermore, we use time dummies to accommodate time-related errors ($DUMMY_t$).

We include China and India dummies in equation (1) to test whether exports and FDI into the two countries from Canada and the U.S. can be well explained by traditional gravity variables. The significance of a country dummy implies that more variable(s) might be needed to explain FDI and exports to that country. In addition, dummies for the Bahamas, Barbados and

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[13] Due to globalization of the world economy, manufacturers can produce components in one country and ship them into another country for processing into final goods, which implies that FDI may induce exports.
[14] Tariff rate is a more direct measure of a country's trade policy. It is not used as an explanatory variable in this paper simply because we could not obtain bilateral tariff data between Canada (or the U.S.) and its trading partners.
[15] Yamarik and Ghosh (2005) examined the robustness of 47 variables used in the gravity model literature and found 20 of them are robustly linked to trade including the level of development, trade agreement and policies, common language, historical ties, geographic factors and so on.

Bermuda are included in explaining Canada's FDI outflows to accommodate unusually high volumes of FDI flows from Canada to the so-called *"Three B"* countries.

Data

Data on each of the variables for Canada and its 54 partner countries and the U.S. and its 95 partner countries, are assembled from various sources. Both the Canadian and the U.S. sample observations exhibit asymmetry in the host for FDI as well as destination for exports. Annual data on outward FDI both for the U.S. and Canada for the period 1989-2001 are obtained from the OECD OLISNET database. These are supplemented for Canada by Statistics Canada's CANSIM and for the U.S., the Bureau of Economic Analysis (BEA) data for missing observations. Whenever a difference is observed between the two sources an average of the two is used. The annual FDI stocks are converted into annual FDI flows by computing the difference in stocks from the previous period. FDI flows are adjusted using GDP deflators.

Annual data on bilateral exports for the period 1989-2001 are obtained from Industry Canada's Trade On Line database and are also adjusted using GDP deflators. GDP data in 1995 US$ for the same period as above for all the host countries, are obtained from the World Bank's World Development Indicators (WDI). For labour compensation we use total average hourly compensation for manufacturing workers for 1999 in US$ from IMD WORLD Competitiveness Yearbook. Distance data is obtained as the "geographical distance" of the principal commercial centres of the home and host country. For example, the distance between Chicago and Toronto is used as the distance between the U.S. and Canada. These are obtained from the website http://www.escapeartist.com/travel/howfar.htm. The official and commonly used languages of each country are obtained from Internet search.

Certain statistical tests on the data were conducted before undertaking the regression analysis. For example, the FDI outflows and exports from Canada and the U.S. and GDP of host countries may not be stationary. We did unit root tests and found[16] that, (1) there is no unit root in the FDI outflows; (2) there is no unit root in the exports when the cross-country fixed effect is included; and (3) there is no unit root in host country GDP when the cross-country fixed effect and time trend are included. Note that the geography distance is time invariant and hence will capture the cross-country fixed effect, and having time dummies can capture time trend effect. Therefore, equation (1) is stationary when the geography distance and time dummies are included.

5. Empirical Results

Equation (1) is estimated using both feasible Generalized Least Square (GLS) with cross-section weights and period Seeming Unrelated Regressions (SUR). The panel corrected standard errors (PCSE) are used in both estimations. The feasible GLS with cross-section weights can take care of cross-sectional heteroskedasticity, while period SUR can take care of period heteroskedasticity and serial correlation. Regression results separately for Canada and U.S. for FDI and exports are summarized in Table 11 to Table 14. The regression results after dropping the GDP growth variable or the openness variable are also presented in the tables to test the robustness of our model results.

Table 11 presents the estimation results for Canada's FDI outflows to 54 partner countries. Not surprisingly, the coefficients of the traditional gravity variables (GDP and geographical distance) have the right sign and are statistically significant. The feasible GLS with cross-section weights and the period SUR basically give similar estimation results (column 1 and

[16] The test results are available upon request.

4 in Table 11). Let us first focus on the feasible GLS estimations with cross-section weights. The elasticity of Canada's FDI outflows with respect to host country's GDP is 1.1, and that with respect to the geographical distance between Canada and its partner countries is –1.1. The coefficient for FDI-to-GDP ratio is positive and statistically significant. This implies that Canadian firms do invest more in countries with higher degrees of openness. The coefficient of GDP growth in GLS estimation is positive and significant.

The coefficient of linguistic ties is positive but the corresponding p-value is bigger than 10 percent by a small margin. This suggests that the evidence is quite weak to support the hypothesis that Canadian firms invest more in English or French-speaking countries. The coefficient of labour cost is negative and statistically significant, implying that Canada's FDI flows more to countries with lower labour cost or wage rate. This is consistent with the vertical FDI model that predicts a firm will locate its labour-intensive activities in a country with relatively abundant labour supply[17]. The India dummy is negative and statistically significant, the China dummy is negative but not significant, and the G7 dummy is positive and insignificant. So Canada's FDI in other G7 countries and China is not significantly different from what the model predicts, while Canada's FDI in India is significantly lower than predicted by the model.

There are two major differences between the estimation results from the two estimators: the coefficient of GDP growth of the host countries becomes statistically insignificant and the coefficient of linguistic tie becomes statistically significant when the period SUR is used. Consequently, due to the mixed evidences, we cannot claim that Canadian firms invest more in English or French-speaking countries and countries with higher GDP growth.

The estimation results for the U.S. FDI outflows are presented in Table 12. The signs of the coefficients of all variables are as expected, and the impact of the host countries' GDP and

[17] See Helpman (1984).

their distance to the U.S. is highly significant. There are several differences between estimation results for Canada and for the U.S. First, the U.S. FDI outflows are more sensitive to the traditional gravity variables. In the feasible GLS estimations with cross-section weights, the elasticity of the U.S. FDI outflows with respect to host country's GDP is 1.5 (compared with 1.1 for Canada's FDI outflows), and that with respect to the geographical distance between the U.S. and its partner countries is –1.7 (compared with -1.1 for Canada's FDI outflows). The conclusion is the same in the period SUR estimations.

Second, while the coefficient of GDP growth is positive and significant both in period SUR and the feasible GLS with cross-section weights estimations for the U.S., for Canadian FDI, it is only significant in GLS estimation. Therefore, the evidence is quite strong for us to claim that the U.S. firms invest more in countries with higher GDP growth. Third, the coefficient of labour cost is negative but not statistically significant in both sets of estimations, which is consistent with the findings in Markusen and Maskus (2002)[18]. Fourth, the coefficient of linguistic ties is positive and significant in both sets of estimations for the FDI outflows from the U.S. However, it is bigger for the U.S. in the feasible GLS estimations with cross-section weights, but smaller in the period SUR estimations. So we cannot conclude that linguistic ties matter more for Canada or for the U.S. Last, in the U.S. FDI equation the India dummy and the dummy for other G7 countries are negative but only statistically significant in the feasible GLS estimations with cross-section weights. However, in Canadian FDI equation the India dummy is negative and significant in both GLS and period SUR estimates. The dummy for G7 is insignificant in Canadian FDI equation estimates. Thus, while no strong conclusion about the

[18] The authors use data on the U.S. inward and outward FDI and find that evidence strongly rejects the vertical model of FDI.

U.S. FDI performance in India can be made our results suggest that Canadian investors are investing less in India compared to the model predictions.

The estimation results for exports are shown in Table 13 (for Canada) and Table 14 (for the U.S.). As expected, the coefficients of GDP, trade-to-GDP ratio, and linguistic tie are positive and statistically significant and the coefficient of geographical distance is negative and statistically significant in both equations for Canadian and U.S. exports. The coefficient of labour cost is negative but not statistically significant in both equations, which may suggest that the FDI-induced exports are not yet an important part of total exports in the two countries.

No country dummy is statistically significant, implying that exports from Canada and the U.S. to China, India and other G7 countries are not significantly different from what our model predicts. Note that the coefficients of GDP and geographical distance are bigger (in terms of absolute value) for Canada's exports in the feasible GLS estimations with cross-section weights, but lower in the period SUR estimations. Therefore, we cannot claim that exports of the two countries respond differently to economic size and geographical distance of their trade partners. There are a couple of differences between Canadian and U.S. exports. First, the coefficient of GDP growth is positive for both countries' exports but only statistically significant for Canada's exports in both sets of estimations, suggesting that Canada exports more to countries with higher GDP growth, while the U.S. does not. Second, though the coefficient of linguistic tie is statistically significant for both countries' exports, its magnitude is bigger for the U.S. exports in both sets of estimations.

By comparing the estimation results for FDI with those for exports, we find that FDI and exports behave quite the same way. The only major difference between the two is that exports of the two countries are highly persistent, but FDI outflows of the countries are not. The Durbin-

Watson statistics (see Table 11 and Table 12) shows that there is no evidence of autocorrelation for FDI outflows of both countries, while the autocorrelation term is highly significant in exports equations and its coefficient is about 0.96 for the U.S. exports and 0.94 for Canada's exports.

With respect to the question of whether Canada is able to exploit its full potential in foreign markets in terms of exports and FDI and its performance with respect to the U.S., a few observations can be made from the regression results above. First, Canada's exports are positively related to economic size as well as economic growth in the host countries, which seems to suggest that Canada is able to exploit market opportunities. Second, Canada's exports and U.S. exports behave much the same way in response to economic size and geographical distance of host countries, although Canada's FDI outflows are less sensitive to these two variables than those for the U.S. Third, in FDI, regression results show that Canada's FDI in India is lower than that predicted by the model. Finally, while the econometric evidence, that the investors from the U.S. tend to invest more in the growing economies, is quite strong the evidence is weak in case of Canada.

Although in-depth research at industry level is needed to understand why Canadian investment behaviour looks somewhat different from the U.S., we try to provide some plausible explanations. A comparison of Tables 7 and 8 reveals that, the industrial composition of outward FDI from Canada and the U.S. is quite different. Canada's outward FDI is heavily concentrated in the financial services and mining sectors, while the U.S. is relatively diversified.[19] Financial services and mining accounted for more than 64% of Canada's FDI outward at the end of 2003. These two sectors appear to be among the highly protected sectors in most countries through

[19] Table 7 shows that during the period of 1992-2003, financial activities accounted for 35.9 per cent of Canada's FDI outward, followed by mining (21.2 per cent), manufacturing (18.1 per cent), transport & communication (9.7 per cent), other services (8.2 per cent) and construction (2.5 per cent). During the same period, manufacturing accounted for 28.0% of the U.S. FDI outward, followed by financial activities (26.9%), business activities (22.6%), trade (9.8%) and mining (6.8%), as shown in Table 8.

ownership restrictions. For example, although the economies of China and India have experienced dramatic growth in recent years, the inflow of FDI in mining and finance has been very small, perhaps due to entry barriers. FDI in China has been dominated by manufacturing, while in India it has been dominated by ICT and transportation.[20]

Though dramatically decreased since 1995, the share of manufacturing industries in the total U.S. direct investment abroad is about 19 percent in 2003 (Table 8), still much higher than that of Canada. The U.S. invests more abroad in manufacturing, business services and trade than Canada. These sectors (especially manufacturing) are much less protected than financial markets and mining. Actually, many countries such as China try to attract more foreign investment in manufacturing through lower tax and/or other policy tools. So, it seems that the U.S. outward FDI is more demand-based and Canada's FDI outward is more supply-based. This might partly explain why the U.S. invests more in big and dynamic economies than Canada. These economies have huge demand for investment in manufacturing and the U.S. investors can do better than Canadian investors to meet the demand. FDI from Canada flows to countries with less restriction on investment in the two sectors. These countries do not have to be big or dynamic. Such mismatch between what Canada can provide and what countries like China and India need may likely be the major reason for the difference in the behaviour of FDI outflows between Canada and the U.S.

6. Concluding Remarks

In this paper we analyze the relative importance of various factors that influence FDI outflow and exports from Canada and the U.S. using panel data for the period 1989-2001. We

[20]. Table 6 shows that manufacturing accounted for about 70% of total FDI inward in China in 2003. Similarly, Table 10 shows that about 47 percent of FDI inflows in India during the period of 1991 to 2004 are taken place in ICT and transportation equipments.

find that economic size, growth and the degree of openness of the host countries, linguistic ties and distance between source and host countries are main variables influencing Canadian exports and FDI. The estimated coefficients have the expected signs. Our results somewhat confirm that the outburst of inward FDI in China and India are due to their economic size and economic growth. We argue that the weak evidence of Canadian investors' positive response with respect to economic growth in the host countries is due to a possible mismatch between the areas of investment opportunities vis-à-vis its comparative advantage. Mining and financial services, in which a high proportion Canadian outward FDI has taken place, are not yet opened up (at least for the period we cover in our analysis) for FDI in countries such as India and China. In most countries including China and India manufacturing is relatively opened up FDI.

Canadian manufacturers invest less abroad than their U.S. counterparts and there is big demand for FDI in manufacturing in both China and India. China has become a significant location for the export-processing link in a global supply chain. As pointed out in Dobson (2004), processed exports accounted for 56% of total exports in China during 1997-2002. The export share of foreign invested enterprises (FIEs) was 48% in China in 2002. The situation is similar in India.

Further studies by industry/firm level are needed to understand why Canadian manufacturers invest less abroad. Based on conditions for China to be a WTO member country, China's local financial and related markets will be more open in near future, which is a good opportunity for foreign financial companies. Canadian investment in China is likely to increase as these sectors are opened up.

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Table 1: FDI and Exports from the World, Canada and U.S. to China and India

	1992	1995	2000	2002**
A. China's share in (%)				
World merchandise imports (%)	2.7	2.5	3.4	5.3
Canadian exports	1.4	1.3	0.9	1.0
U.S. exports	1.7	2.0	2.1	3.2
World inward FDI (%)	1.1*	4.5	5.7	6.1
Canadian outward FDI	0.04	0.23	0.16	0.14
U.S. outward FDI	0.11	0.40	0.85	0.68
B. India's share (%)				
World merchandise imports (%)	0.52	0.59	0.66	0.75
Canadian exports	0.33	0.17	0.14	0.20
U.S. exports	0.43	0.57	0.47	0.69
World inward FDI (%)	0.08*	0.19	0.29	0.37
Canadian outward FDI	0.09	0.11	0.04	0.05
U.S. outward FDI	0.10	0.16	0.18	0.24

Source: Trade data: Trade data online (Canada), USITC online database, International Trade Statistics, WTO. FDI: World Investment Report (2003, 2004), Olisnet, U.S. Bureau of Economic Analysis.

Note: * Data for 1990. ** Some correspond to 2003 data.

Table 2: Canadian Direct Investment Position by Geographical Area: 1960-2003
(Millions of Canadian dollars and percent)

	United States	United Kingdom	Other EU	Japan	Other OECD	China	India	Other Countries	All Countries
1960	1,716	277	46	15	-	-	-	-	2,600
1970	3,518	636	304	48	142	-	-	-	6,520
1980	17,849	3,080	1,377	109	1,370	-	-	-	28,413
1990	60,049	13,527	7,098	917	3,996	6	94	12,809	98,402
1991	63,379	15,262	8,505	2,182	3,548	25	84	16,167	109,068
1992	64,502	12,271	9,071	2,521	3,957	43	98	19,326	111,691
1993	67,677	12,907	11,478	2,845	4,355	225	110	22,940	122,427
1994	77,987	15,038	15,620	3,485	6,635	257	169	27,293	146,315
1995	84,562	16,412	18,106	2,739	7,166	366	179	31,886	161,237
1996	93,939	17,825	19,192	2,676	8,392	410	128	38,804	181,238
1997	110,707	22,722	22,416	2,985	9,284	419	122	50,074	218,607
1998	133,267	24,956	29,149	3,268	11,579	446	169	60,244	262,909
1999	151,775	25,686	28,384	3,853	12,381	711	247	67,940	290,730
2000	177,943	35,170	39,998	5,613	17,600	565	129	79,617	356,506
2001	190,528	39,786	42,124	7,013	25,170	589	145	93,645	398,855
2002	197,128	40,189	49,052	9,514	29,574	601	183	103,575	429,633
2003	164,874	40,703	58,374	9,123	26,972	542	184	98,546	399,134
% Change									
1992-2002*	205.6	227.5	440.8	277.4	647.4	1297.7	86.7	435.9	284.7
% of total									
1960	66.0	10.7	1.8	0.6	-	-	-	-	100.0
1970	54.0	9.8	4.7	0.7	2.2	-	-	-	100.0
1980	62.8	10.8	4.8	0.4	4.8	-	-	-	100.0
1990	61.0	13.7	7.2	0.9	4.1	0.01	0.10	13.0	100.0
1991	58.1	14.0	7.8	2.0	3.3	0.02	0.08	14.8	100.0
1992	57.8	11.0	8.1	2.3	3.5	0.04	0.09	17.3	100.0
1993	55.3	10.5	9.4	2.3	3.6	0.18	0.09	18.7	100.0
1994	53.3	10.3	10.7	2.4	4.5	0.18	0.12	18.7	100.0
1995	52.4	10.2	11.2	1.7	4.4	0.23	0.11	19.8	100.0
1996	51.8	9.8	10.6	1.5	4.6	0.23	0.07	21.4	100.0
1997	50.6	10.4	10.3	1.4	4.2	0.19	0.06	22.9	100.0
1998	50.7	9.5	11.1	1.2	4.4	0.17	0.06	22.9	100.0
1999	52.2	8.8	9.8	1.3	4.3	0.24	0.08	23.4	100.0
2000	49.9	9.9	11.2	1.6	4.9	0.16	0.04	22.3	100.0
2001	47.8	10.0	10.6	1.8	6.3	0.15	0.04	23.5	100.0
2002	45.9	9.4	11.4	2.2	6.9	0.14	0.04	24.1	100.0
2003	41.3	10.2	14.6	2.3	6.8	0.14	0.05	24.7	100.0

Source: Computed from Statistics Canada CANSIM Table: 376-0037, International Investment Position, Annual Dollars.

Note: * the % change is computed from the FDI position at annual dollars. While the U.S. numbers (Table 3) are computed from FDI position on a Historical cost basis.

Table 3: US Direct Investment Position Abroad on a Historical-Cost Basis, by Major Regions (Millions of dollars and percent)

Year	World	Canada	Mexico	NAFTA	Latin American and Western Hemisphere (inc. Mexico)	Europe	Asia and Pacific	China	India	Other
1982	207,752	43,511	na	na	28,161	92,449	28,282	49	360	15,300
1985	238,369	47,934	na	na	30,417	108,664	35,294	322	383	15,738
1990	430,521	69,508	na	na	71,413	214,739	64,718	354	372	9,789
1991	467,844	70,711	na	na	77,677	235,163	72,219	426	415	11,648
1992	502,063	68,690	na	na	91,307	248,744	79,962	563	485	12,797
1993	564,283	69,922	15,229	85,151	100,482	285,735	92,671	916	599	14,557
1994	621,044	74,987	15,714	90,701	112,266	310,031	108,075	2,557	1,030	13,128
1995	699,015	83,498	16,873	100,371	131,377	344,596	122,711	2,765	1,105	14,068
1996	777,203	91,301	19,900	111,201	147,535	382,366	136,481	3,848	1,344	15,672
1997	860,723	99,859	25,395	125,254	172,481	420,934	142,704	5,150	1,563	19,595
1998	1,000,703	98,200	26,657	124,857	196,755	518,433	159,678	6,350	1,592	21,287
1999	1,215,960	119,590	37,151	156,741	253,928	627,754	190,621	9,401	2,390	14,666
2000	1,316,247	132,472	39,352	171,824	266,576	687,320	207,125	11,140	2,379	11,614
2001	1,383,225	141,789	56,554	198,343	282,328	716,901	216,445	11,387	2,775	14,375
2002	1,520,965	152,522	58,074	210,596	272,363	796,913	269,947	10,294	3,678	18,926
					% change					
1982-2002	632.1	250.5	na	na	867.2	762.0	854.5	20908.2	921.7	23.7
1992-2002	169.5	118.1	281.3	147.3	171.1	178.9	191.3	1023.8	635.5	30.0
					% of total					
1982	100.0	20.9	na	na	13.6	44.5	13.6	0.02	0.17	7.4
1985	100.0	20.1	na	na	12.8	45.6	14.8	0.14	0.16	6.6
1990	100.0	16.1	na	na	16.6	49.9	15.0	0.08	0.09	2.3
1991	100.0	15.1	na	na	16.6	50.3	15.4	0.09	0.09	2.5
1992	100.0	13.7	na	na	18.2	49.5	15.9	0.11	0.10	2.5
1993	100.0	12.4	2.7	15.1	17.8	50.6	16.4	0.16	0.11	2.6
1994	100.0	12.1	2.5	14.6	18.1	49.9	17.4	0.41	0.17	2.1
1995	100.0	11.9	2.4	14.4	18.8	49.3	17.6	0.40	0.16	2.0
1996	100.0	11.7	2.6	14.3	19.0	49.2	17.6	0.50	0.17	2.0
1997	100.0	11.6	3.0	14.6	20.0	48.9	16.6	0.60	0.18	2.3
1998	100.0	9.8	2.7	12.5	19.7	51.8	16.0	0.63	0.16	2.1
1999	100.0	9.8	3.1	12.9	20.9	51.6	15.7	0.77	0.20	1.2
2000	100.0	10.1	3.0	13.1	20.3	52.2	15.7	0.85	0.18	0.9
2001	100.0	10.3	4.1	14.3	20.4	51.8	15.6	0.82	0.20	1.0
2002	100.0	10.0	3.8	13.8	17.9	52.4	17.7	0.68	0.24	1.2
					% change					
1982-2002	0.0	-52.1	na	na	32.1	17.7	30.4	2769.6	39.6	-83.1
1992-2002	0.0	-19.1	41.5	-8.2	0.6	3.5	8.1	316.9	140.6	-51.8

Source: Adapted from BEA, *Survey of Current Business*: Various issues.

Table 4: Actual FDI inflows in China by source, 1992-2000

	1992	1993	1994	1995	1996	1997	1998	1999	2000	1992-2000
					Value (million $US)					
Total	11008	27515	33767	37521	41745	45277	45463	40319	40715	323328
Hong Kong	7507	17275	19665	20060	20677	20632	18508	16363	15500	156188
United States	511	2063	2491	3083	3443	3239	3898	4216	4384	27329
Taiwan	1051	3139	3391	3162	3475	3289	2915	2599	2297	25316
Japan	710	1324	2075	3108	3679	4326	3400	2973	2916	24513
Singapore	122	490	1180	1851	2244	2606	3404	2642	2172	16712
Virgin Islands				304	538	1717	4031	2659	3833	13082
Korea	119	374	723	1043	1358	2142	1803	1275	1490	10326
United Kingdom	38	221	689	914	1301	1858	1175	1044	1164	8404
Germany	89	56	259	386	518	993	737	1373	1041	5453
France	45	141	192	287	424	475	715	884	853	4016
Macau	202	587	509	440	580	395	422	309	347	3790
Netherlands	28	84	111	114	125	414	719	542	789	2926
Canada	58	137	216	257	338	344	317	314	280	2261
Malaysia	25	91	201	259	460	382	340	238	203	2199
Australia	35	110	188	233	194	314	272	263	309	1918
					Share in total (percent)					
Hong Kong	68.2	62.8	58.2	53.5	49.5	45.6	40.7	40.6	38.1	48.3
United States	4.6	7.5	7.4	8.2	8.2	7.2	8.6	10.5	10.8	8.5
Taiwan	9.5	11.4	10.0	8.4	8.3	7.3	6.4	6.4	5.6	7.8
Japan	6.4	4.8	6.1	8.3	8.8	9.6	7.5	7.4	7.2	7.6
Singapore	1.1	1.8	3.5	4.9	5.4	5.8	7.5	6.6	5.3	5.2
Virgin Islands				0.8	1.3	3.8	8.9	6.6	9.4	4.0
Korea	1.1	1.4	2.1	2.8	3.3	4.7	4.0	3.2	3.7	3.2
United Kingdom	0.3	0.8	2.0	2.4	3.1	4.1	2.6	2.6	2.9	2.6
Germany	0.8	0.2	0.8	1.0	1.2	2.2	1.6	3.4	2.6	1.7
France	0.4	0.5	0.6	0.8	1.0	1.0	1.6	2.2	2.1	1.2
Macau	1.8	2.1	1.5	1.2	1.4	0.9	0.9	0.8	0.9	1.2
Netherlands	0.3	0.3	0.3	0.3	0.3	0.9	1.6	1.3	1.9	0.9
Canada	0.5	0.5	0.6	0.7	0.8	0.8	0.7	0.8	0.7	0.7
Malaysia	0.2	0.3	0.6	0.7	1.1	0.8	0.7	0.6	0.5	0.7
Australia	0.3	0.4	0.6	0.6	0.5	0.7	0.6	0.7	0.8	0.6

Source: Fung, Iizaka and Tong (2002).

Table 5: Ratio of Outward FDI Flow to Export from Canada, the United States and World in China and India (percent)

	Canada			United States			World		
	Overall	China	India	Overall	China	India	Overall	China	India
Average (1991-1996)	5.1	2.6	4.4	13.2	6.4	6.1	6.3	24.1	3.9
1997	10.7	1.1	3.0	14.0	9.3	4.5	8.6	31.1	8.7
1998	16.0	4.0	10.0	19.3	13.0	9.8	12.4	31.2	6.1
1999	7.2	3.7	8.7	30.2	15.2	7.4	19.2	24.3	4.6
2000	16.8	2.6	5.6	18.3	10.3	10.9	18.6	18.1	4.5

Source: Trade data: Trade data online (Canada), USITC online database and International trade statistics, WTO, FDI: World Investment Report (2003, 2004), OECD (Olisnet) database and U.S,, Bureau of Economic Analysis.

Table 6: Composition of Chinese inward FDI by Industry: 2003

	US$ 100 million	Share (%)
Agriculture	10.01	1.87
Mining	3.36	0.63
Manufacturing	374.67	70.03
Utilities	12.95	2.42
Construction	6.12	1.14
Transportations	8.67	1.62
Wholesale and Retail	11.16	2.09
Finance	2.32	0.43
Real Estate	52.36	9.79
Business Services	17.2	3.21
S&T Services	2.76	0.52
Household Services	31.61	5.91
Education	0.58	0.11
Health	1.27	0.24
Total	535.05	100.00

Source: http://www.fdi.gov.cn/common/info.jsp?id=ABC00000000000016800 accessed on October 19, 2004.

Table 7: Canada's direct investment abroad: year-end outward position by industrial sector (%), 1992-2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average 1992-2003
Mining & quarrying	21.67	22.06	22.00	23.08	24.67	24.28	22.33	20.79	18.97	19.04	19.53	22.02	21.20
Manufacturing	21.18	18.80	17.67	16.83	16.08	16.25	18.92	18.51	23.51	18.13	16.23	15.92	18.10
Construction	3.97	3.63	3.02	2.73	2.71	2.76	2.65	2.82	2.29	2.28	2.08	1.91	2.52
Transport & communication	12.97	12.77	13.99	13.97	12.76	10.41	10.55	11.31	8.34	9.12	6.52	5.97	9.66
Financial activities	28.78	30.51	30.57	30.35	32.06	33.72	32.54	35.81	33.80	38.02	42.09	42.22	35.92
Other services	4.69	4.51	4.61	6.87	7.02	7.06	7.90	6.44	9.86	10.08	10.26	8.94	8.16
Unallocated	6.74	7.72	8.15	6.16	4.71	5.51	5.11	4.32	3.25	3.34	3.29	3.03	4.43
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Calculated using data from page 70, OECD FDI Statistics Yearbook, 2004 edition.

Table 8: U.S. direct investment abroad: year-end outward position by industrial sector (%), 1992-2003

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average 1992-2003
Agriculture & fishing	0.15	0.12	0.14	0.07	0.09	0.06	0.07	0.13	0.13	0.07	0.09	0.09	0.10
Mining & quarrying	12.77	12.44	7.91	7.04	7.59	7.54	7.30	5.96	5.48	5.44	5.41	5.52	6.76
Manufacturing	37.10	34.07	36.06	37.70	36.29	34.12	30.94	26.92	26.13	22.46	21.19	21.13	27.96
Electricity, gas & water	0.23	0.29	0.40	0.86	1.36	1.65	2.12	1.85	1.67	1.75	1.52	1.50	1.44
Construction	0.22	0.20	0.15	0.17	0.20	0.15	0.14	0.13	0.14	0.16	0.16	0.15	0.16
Trade & repair	12.25	11.86	5.79	12.41	10.99	10.29	9.39	8.66	8.93	9.62	9.66	9.83	9.78
Hotels & restaurants	0.29	0.22	0.34	0.29	0.28	0.30	0.37	1.35	1.33	1.19	1.27	1.24	0.88
Transport & communication	1.61	1.81	1.98	2.08	2.05	2.32	2.63	3.49	3.21	1.92	1.48	1.24	2.14
Financial activities	31.75	35.56	36.19	35.24	36.50	38.39	41.27	19.71	19.54	20.26	20.06	20.32	26.90
Real estate & business activities	2.07	1.97	3.55	3.46	3.96	4.56	4.48	30.46	32.36	36.21	38.42	38.28	22.60
Other services	1.55	1.45	0.76	0.67	0.68	0.63	0.03	1.36	1.08	0.90	0.74	0.72	0.85
Unallocated	0.00	0.00	6.74	0.00	0.00	0.00	1.26	0.00	0.00	0.00	0.00	0.00	0.43
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Calculated using data from page 379, OECD FDI Statistics Yearbook, 2004 edition.

Table 9: Share of Top Investing Countries in FDI Inflows in India: (1991-2003), Calendar Year (US $ in billion and percent)

	Cumulative Total (1991-1999)	2000	2001	2002	2003	Cumulative Total (1991-2003)	Percentage to Total (1991-2003)
Mauritius	3.42	0.83	1.67	1.52	0.56	8.00	35.09
U.S.	2.31	0.42	0.37	0.28	0.41	3.79	16.62
Japan	0.82	0.23	0.22	0.41	0.09	1.77	7.76
UK	0.66	0.07	0.29	0.35	0.19	1.56	6.84
Netherlands	0.61	0.13	0.23	0.16	0.25	1.38	6.05
Germany	0.66	0.09	0.13	0.14	0.08	1.10	4.82
France	0.27	0.08	0.13	0.11	0.04	0.63	2.76
Korea	0.57	0.12	0.01	0.04	0.02	0.76	3.33
Singapore	0.34	0.12	0.04	0.05	0.04	0.59	2.59
Switzerland	0.23	0.04	0.04	0.05	0.09	0.45	1.97
Total top 10	**9.89**	**2.13**	**3.13**	**3.11**	**1.77**	**20.03**	**87.85**
Other*	1.6	0.22	0.39	0.25	0.31	2.77	12.15
Total*	11.49	2.35	3.52	3.36	2.08	22.80	100.00

Note: * excluding ADRs/GDRs etc. Total amount includes FDI inflows received through FIPB+SIA+RBI routes, RBI's NRI schemes, stock swapped, amount on account of ADRs/GDRs & advances pending for issue of shares.

Source: **Economic Survey of India: 2003-2004.**

Table 10: Composition of FDI inflows into India: 1991 to March 2004

	FDI inflows (US$ billion)	Percentage to total
1. Energy	2.32	12.64
2. Telecommunications	2.56	13.94
3. Electrical Equipments (including computer software & electronics)	3.32	18.08
4. Transportation	2.78	15.14
5. Services sector	2.04	11.11
6. Metallurgical industries	0.31	1.69
7. Chemicals (other than fertilizers)	1.49	8.12
8. Food and food processing	1.09	5.94
9. Hotel& Tourism	2.14	11.66
10. Textiles	0.31	1.69
Total*	18.36	100.00

Note: Total do not include FDI inflows for ADRs/GDRs/FCCBs, RBI's NRI Schemes, acquisition of existing shares (up to 1999), stock swapped & advance pending for allotment of shares, as these are not categorized sector wise.

Source: Economic Survey 2003-2004, Ministry of Finance, and India.

Table 11: Regression Results for Canada's FDI Outflows

Dependent Variable: Log of FDI Outflows: 1990-2001						
	GLS (cross section weights)			Period SUR		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-1.6116 (0.6324)	0.7145 (0.8294)	-1.9866 (0.5547)	-0.8280 (0.8568)	-1.0235 (0.8236)	0.1805 (0.9701)
Log of GDP	1.1088*** (0.0000)	0.9551*** (0.0000)	1.1587*** (0.0000)	0.9597*** (0.0000)	0.9729*** (0.0000)	0.9094*** (0.0001)
Log difference of GDP	5.5916** (0.0103)		4.0233* (0.0683)	2.0027 (0.6409)		3.6663 (0.3918)
FDI-to-GDP ratio	0.0535*** (0.0083)	0.0378** (0.0500)		0.0738** (0.0157)	0.0761** (0.0120)	
Log of geographical distance	-1.0982*** (0.0000)	-1.1506*** (0.0000)	-1.0771*** (0.0000)	-1.0476** (0.0235)	-1.0374** (0.0250)	-1.0773** (0.0267)
Labour compensation	-0.0972*** (0.0020)	-0.0779** (0.0123)	-0.0885*** (0.0046)	-0.0996*** (0.0079)	-0.1015*** (0.0068)	-0.0781** (0.0416)
Linguistic tie	0.6716 (0.1063)	0.5874 (0.1562)	0.6903* (0.0940)	1.0943** (0.0436)	1.1304** (0.0371)	1.2399** (0.0270)
China Dummy	-1.4121 (0.2180)	-0.6489 (0.5683)	-1.5495 (0.1824)	-2.1164 (0.2371)	-2.0778 (0.2430)	-1.8587 (0.3233)
India Dummy	-3.5864** (0.0212)	-3.0988** (0.0465)	-3.9888** (0.0103)	-3.8046** (0.0369)	-3.7763** (0.0384)	-4.4016** (0.0209)
Dummy for other G7	0.8161 (0.3876)	1.1610 (0.2117)	0.2707 (0.7742)	-0.1523 (0.8829)	-0.1759 (0.8650)	-0.4638 (0.6664)
Number of cross-sections used	54	54	54	54	54	54
Total panel (balanced) observations	648	648	648	648	648	648
Durbin-Watson Statistics	1.6513	1.6456	1.6231	1.9966	1.9966	1.9966
Adjusted R-squared	0.8702	0.8446	0.8581	0.1051	0.1066	0.0909
Period fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** significant at 1% level, ** significant at 5% level, * significant at 10% level. Figures in parentheses are p-values. Dummies for Bermuda, Bahamas and Barbados are included but the associated coefficients are not reported.

Table 12: Regression Results for U.S. FDI Outflows

Dependent Variable: Log of FDI Outflows: 1990-2001						
	GLS (cross section weights)			Period SUR		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.6075 (0.7940)	1.0534 (0.6448)	2.9714 (0.2235)	2.0329 (0.4522)	2.6190 (0.3229)	1.7972 (0.5365)
Log of GDP	1.4702*** (0.0000)	1.5314*** (0.0000)	1.4476*** (0.0000)	1.0507*** (0.0000)	1.0248*** (0.0000)	1.0563*** (0.0000)
Log difference of GDP	8.4362*** (0.0009)		8.4075*** (0.0008)	7.0593*** (0.0079)		7.9437*** (0.0028)
FDI-to-GDP ratio	0.0888*** (0.0000)	0.0855*** (0.0000)		0.0974*** (0.0001)	0.1048*** (0.0000)	
Log of geographical distance	-1.6946*** (0.0000)	-1.7778*** (0.0000)	-1.9084*** (0.0000)	-1.3830*** (0.0000)	-1.4087*** (0.0000)	-1.3458*** (0.0001)
Labour compensation	-0.0383 (0.1538)	-0.0365 (0.1654)	-0.0160 (0.5326)	0.0127 (0.6376)	0.0174 (0.5151)	0.0472* (0.0967)
Linguistic tie	1.1440*** (0.0001)	1.2226*** (0.0000)	1.2442*** (0.0000)	0.8425** (0.0125)	0.7712** (0.0195)	0.9956*** (0.0056)
China Dummy	-1.3698 (0.1898)	-1.0791 (0.3039)	-1.0070 (0.3338)	0.4634 (0.7667)	1.1242 (0.4610)	0.5203 (0.7566)
India Dummy	-2.9310** (0.0221)	-2.9842** (0.0226)	-3.0212** (0.0215)	-1.3511 (0.3856)	-1.4512 (0.3404)	-1.7671 (0.2901)
Dummy for other G7	-2.7255*** (0.0005)	-3.1973*** (0.0000)	-2.9753*** (0.0001)	-0.0025 (0.9975)	0.1047 (0.8905)	-0.4208 (0.6135)
No of cross-sections used	95	95	95	95	95	95
Total panel (balanced) observations	1140	1140	1140	1140	1140	1140
Durbin-Watson Statistics	1.7859	1.7676	1.7600	1.9981	1.9981	1.9981
Adjusted R-squared	0.3036	0.3267	0.2742	0.1755	0.1706	0.1509
Period fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** significant at 1% level, ** significant at 5% level, * significant at 10% level. Figures in parentheses are p-values.

Table 13: Regression Results for Canada's Exports

Dependent Variable: Log of Exports: 1990-2001						
	GLS (cross section weights)			Period SUR		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	1.4115 (0.4239)	0.9487 (0.5907)	1.1566 (0.4935)	-1.2383 (0.2995)	-1.1483 (0.3223)	-1.3438 (0.2610)
Log of GDP	1.2259*** (0.0000)	1.2579*** (0.0000)	1.2050*** (0.0000)	0.9912*** (0.0000)	0.9965*** (0.0000)	0.9965*** (0.0000)
Log difference of GDP	0.4679** (0.0434)		0.3636 (0.1194)	0.6738*** (0.0078)		0.6418** (0.0128)
Trade-to-GDP ratio	0.0057*** (0.0000)	0.0055*** (0.0000)		0.0051*** (0.0000)	0.0051*** (0.0000)	
Log of geographical distance	-1.2500*** (0.0000)	-1.2396*** (0.0000)	-1.1372*** (0.0002)	-0.6092*** (0.0000)	-0.6243*** (0.0000)	-0.5666*** (0.0000)
Labour compensation	-0.0186 (0.2715)	-0.0202 (0.2380)	-0.0113 (0.5106)	-0.0138 (0.2243)	-0.0135 (0.2221)	-0.0090 (0.4244)
Linguistic tie	0.3973 (0.1167)	0.4228* (0.0945)	0.6483*** (0.0069)	0.6313*** (0.0003)	0.6468*** (0.0001)	0.8075*** (0.0000)
China Dummy	-0.1949 (0.8407)	-0.2338 (0.8140)	-0.2631 (0.7712)	0.7620 (0.1811)	0.6687 (0.2278)	0.2682 (0.6379)
India Dummy	-0.3013 (0.8651)	-0.3718 (0.8347)	-0.8493 (0.6116)	0.0247 (0.9664)	0.0259 (0.9638)	-0.5606 (0.3363)
Dummy for other G7	-0.6123 (0.1062)	-0.7171* (0.0590)	-1.0567*** (0.0047)	-0.1355 (0.6769)	-0.1764 (0.5762)	-0.4428 (0.1713)
AR(1)	0.9394*** (0.0000)	0.9396*** (0.0000)	0.9367*** (0.0000)			
No of cross-sections used	54	54	54	54	54	54
Total panel (balanced) observations	594	594	594	648	648	648
Durbin-Watson Statistics	2.2669	2.2671	2.2713	1.9966	1.9966	1.9966
Adjusted R-squared	0.9963	0.9960	0.9951	0.5006	0.5080	0.4882
Period fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

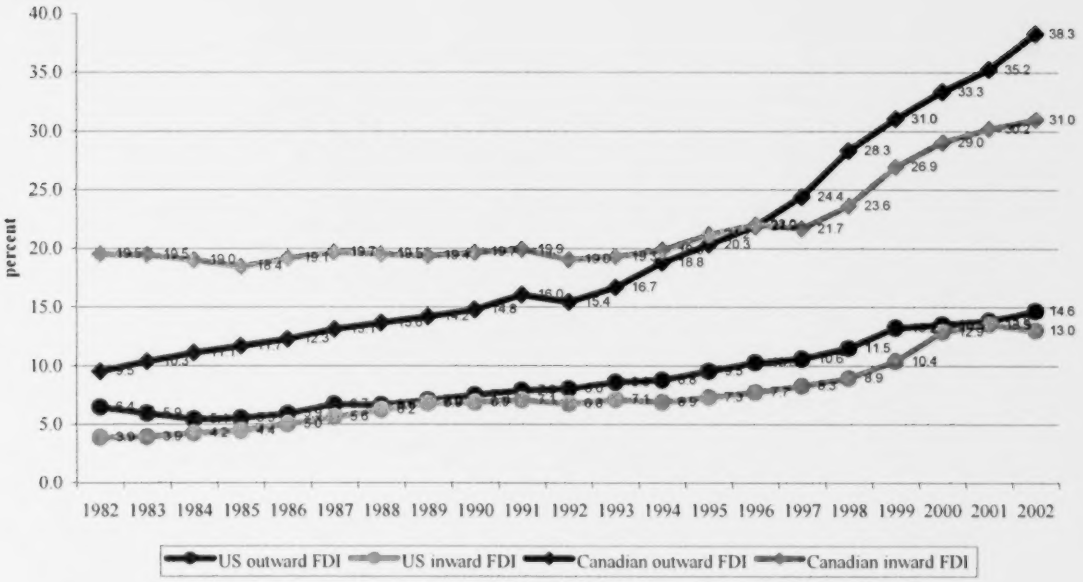
Note: *** significant at 1% level, ** significant at 5% level, * significant at 10% level. Figures in parentheses are p-values.

Table 14: Regression Results for U.S. Exports

Dependent Variable: Log of Exports: 1990-2001						
	GLS (cross section weights)			Period SUR		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	3.8063*** (0.0059)	3.7954*** (0.0065)	2.7615 (0.1728)	4.5707*** (0.0001)	4.5615*** (0.0001)	4.4261*** (0.0007)
Log of GDP	1.1141*** (0.0000)	1.1283*** (0.0000)	1.1633*** (0.0000)	0.9948*** (0.0000)	1.0023*** (0.0000)	0.9140*** (0.0000)
Log difference of GDP	0.1016 (0.3517)		0.1828 (0.1215)	0.1497 (0.2417)		0.1048 (0.4438)
Trade-to-GDP ratio	0.0053*** (0.0000)	0.0053*** (0.0000)		0.0074*** (0.0000)	0.0074*** (0.0000)	
Log of geographical distance	-0.9922*** (0.0000)	-1.0090*** (0.0000)	-0.8810*** (0.0005)	-1.0016*** (0.0000)	-1.0095*** (0.0000)	-0.8422*** (0.0000)
Labour compensation	-0.0268 (0.1177)	-0.0279 (0.1041)	-0.0191 (0.4330)	-0.0184 (0.1089)	-0.0186 (0.1036)	-0.0044 (0.7244)
Linguistic tie	0.5314** (0.0430)	0.5283** (0.0457)	0.6558* (0.0791)	0.8272*** (0.0000)	0.8411*** (0.0000)	0.9941*** (0.0000)
China Dummy	-0.4842 (0.6002)	-0.5266 (0.5755)	-0.8621 (0.5363)	0.2855 (0.6752)	0.2792 (0.6810)	0.4148 (0.5776)
India Dummy	-1.6347 (0.2033)	-1.6626 (0.1985)	-2.2884 (0.2100)	-0.8866 (0.1907)	-0.9063 (0.1793)	-1.2742* (0.0860)
Dummy for other G7	-0.3525 (0.3772)	-0.3971 (0.3177)	-0.4267 (0.4653)	-0.2746 (0.4128)	-0.2978 (0.3715)	-0.3224 (0.3807)
AR(1)	0.9639*** (0.0000)	0.9641*** (0.0000)	0.9738*** (0.0000)			
No of cross-sections used	95	95	95	95	95	95
Total panel (balanced) observations	1045	1045	1045	1140	1140	1140
Durbin-Watson Statistics	2.2346	2.2333	2.1883	1.9981	1.9981	1.9981
Adjusted R-squared	0.9961	0.9960	0.9951	0.4895	0.4906	0.3930
Period fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Note: *** significant at 1% level, ** significant at 5% level, * significant at 10% level. Figures in parentheses are p-values.

Figure 1: FDI Stock as Percentage of GDP: 1982-2002



Source: OECD, FDI - International Direct Investment Statistics Yearbook 2003, Downloaded from Olisnet on October 6, 2004.